DBC
M. de Jong

EPA/EPO/OEB
D-80298 München
+49 89 2399-0
TX 523 656 epmu d
FAX +49 89 2399-4465

Europäisches Patentamt
European Patent Office
Office européen des brevets

Generaldirektion 2
Directorate General 2
Direction Générale 2

Telephone numbers: Branch at The Hague
Primary Examiner (substantive examination) +31 70 340-4529
Formalities Officer / Assistant (Formalities and other matters) +31 70 340-4259

van Westenbrugge, Andries
Nederlandsch Octrooibureau
Postbus 29720
2502 LS Den Haag
PAYS-BAS

Nederlandsch Octrooibureau
Ingek. 06 DEC 2006
Parasol Bewerker

T 5-4-2007
Response 51(2)

Application No.	Ref.	Date
03 711 767.6 - 1216	P217195PCT/EP	05.12.2006
Applicant: Beijing Jiankai Technology Co., Ltd.		

Communication pursuant to Article 96(2) EPC

The examination of the above-identified application has revealed that it does not meet the requirements of the European Patent Convention for the reasons enclosed herewith. If the deficiencies indicated are not rectified the application may be refused pursuant to Article 97(1) EPC.

You are invited to file your observations and insofar as the deficiencies are such as to be rectifiable, to correct the indicated deficiencies within a period

of 4 months

from the notification of this communication, this period being computed in accordance with Rules 78(2) and 83(2) and (4) EPC.

One set of amendments to the description, claims and drawings is to be filed within the said period on separate sheets (Rule 36(1) EPC).

Failure to comply with this invitation in due time will result in the application being deemed to be withdrawn (Article 96(3) EPC).

Europäisches Patentamt · European Patent Office · Office européen des brevets

James, Sonya
Primary Examiner
for the Examining Division

Enclosure(s): 6 page/s reasons (Form 2906)

Registered Letter
CPO Form 2001 07.02CSX

Bescheid/Protokoll (Anlage)	Communication/Minutes (Annex)	Notification/Procès-verbal (Annexe)
Datum / Date: 05.12.2006	Blatt / Sheet / Feuille: 1	Anmelde-Nr.: / Application No.: / Demande n°: 03 711 787.6

The examination is being carried out on the following application documents:

Description, Pages

1-12 as originally filed

Claims, Numbers

1-17 filed with entry into the regional phase before the EPO

Drawings, Sheets

1/3-3/3 as originally filed

1. Reference is made to the following document; the numbering will be adhered to in the rest of the procedure:

D1: WO 01/57067 A (SUPRATEK PHARMA INC) 9 August 2001 (2001-08-09)

D2: EP-A-1 580 216 (NIPPON KAYAKU KABUSHIKI KAISHA) 28 September 2005 (2005-09-28)

2. It is noted that the translation of the priority document of the present application was not available at the time of examination. It has been presumed, for the purposes of this examination, that the claimed priority is valid. Should this prove not to be the case, the document D2 would become a valid prior art document under Article 54(3) EPC. In this case, the document D2 (in particular claim 4) would have a significant effect on the opinion

Bescheid/Protokoll (Anlage)	Communication/Minutes (Annex)	Notification/Procès-verbal (Annexe)
Datum Date Date 05.12.2006	Blatt sheet Feuille 2	Anmelde-Nr.: Application No.: Demande n°: 03 711 787.6

of the examining division regarding the novelty of the subject-matter of the present application.

3. Clarity

The present application does not conform to the requirements of Article 84 EPC, because it is not clear for what subject-matter protection is sought.

3.1. In particular, the term "a linking group" in claim 1 is not clear, as this term has no commonly accepted meaning in the art other than that it is a group which can be used to link two other groups together. This seems, indeed, to be an attempt to define the subject-matter for which protection is sought in terms of a result to be achieved. Such a definition is only allowable under the conditions elaborated in the Guidelines C-III, 4.7. In this instance, however, such a formulation is not allowable because it appears possible to define the subject-matter in more concrete terms, viz. in terms of which linking groups are to be used in order to achieve the effect. The claim should therefore be amended so as to define the subject-matter for which protection is sought in terms of defined chemical structures.

3.2. Furthermore, the terms "a drug molecule" in claim 1, "the active ingredient of a nature medicine" in claim 11 and "an antitumor agent" in claim 12 are not clear. It is not clear for which drug molecules protection is sought, since it does not seem possible that all known drug molecules or antitumor agents could be linked to an oligopeptide in the manner described in claim 1. The claims should be amended to remove this unclarity.

3.3. Claims 6 and 7 do not conform to the requirements of Article 84 EPC in that it is not clear to which "free hydroxyl group" they refer. These claims are dependent on claim 1, where the group "P" may be any hydrophilic polymer. The group of "hydrophilic polymers" contains a very wide range of possibilities, including some molecules containing no free hydroxyl groups, and some molecuels containing many free hydroxyl groups. These claims should therefore be amended so as to limit them to compounds for which it is clear which "free hydroxyl group" should be substituted, or deleted altogther.

3.4. Claim 8 also does not conform to the requirements of Article 84 EPC in that the term

"a target molecule is carried in the hydrophilic polymer" is not clear. It is not evident from this claim whether a "target molecule" should form an integral part of the hydrophilic polymer or is in some way associated with the polymer. The claim should be amended into an acceptable form or deleted altogether.

3.5. It is further noted that the term "preferably being selected from" in claims 11 and 12, and the term "wherein it may be formulated" in claim 16, introduce unclarity into these claims, in that any features disclosed after such terms do not have any limiting effect on the scope of the claims (see the Guidelines, C-III-4.6). That is, for example, claim 12 is considered to mean only "the conjugate of claim 10 wherein TA is an antitumor agent." and claim 16 is considered to be merely a repetition of claim 14.

With reference to the clarity problems discussed in section 2.2. above, the applicant is invited to restrict these claims to the "preferred" features. If claim 16 is not restricted to the preferred features, it should be deleted altogether.

For the purposes of examination, the linking group X has been considered as defined in claim 5. Claims 6 and 7 have been considered to be restricted to hydrophilic polymers which have a single terminal free hydroxy group. Claim 8 has been considered to mean that a target(ing) molecule is in some way associated with or physically linked to the hydrophilic polymer.

4. "second medical use" claims

Claim 17 is currently in the form of a so-called "second medical use" claim, but is not an acceptable "second medical use" claim because it is not directed to a defined, real treatment of a pathological condition (see the Guidelines, C-IV-4.2), indeed, it is not directed to any pathological condition. The applicant is therefore invited to amend the claim into either an acceptable "second medical use" type claim, or into a "first medical use" type claim in accoradance with the Guidelines (C-IV-4.2).

5. Novelty and Inventive step

5.1. The document D1 discloses a conjugate of paclitaxel with polyglutamic acid, which is further conjugated to a peptide, said peptide having affinity for a VEGF receptor. (Example 8). The peptide is considered to be a hydrophilic polymer, and is further considered to be a target(ing) molecule.

The difference between claim 1, and the conjugate of D1, is that in claim 1, the number of glutamic acid residues is small and defined (2-12 residues), whereas in D1, a large polyglutamic acid is used, with a molecular weight which appears to be clearly out of the range of claim 1 of the present application.

The technical effect of this difference could be considered to be better control over the properties of the molecule, since the size of the polyglutamic acid part of the compounds of claim 1 is controlled and defined.

The problem to be solved can therefore be seen as how to adapt the compounds of D1, so as to have better control over the properties of the compounds.

Although it would be obvious to the person skilled in the art that controlling the number of glutamic acid residues in the molecule would be a good method for controlling the properties of the molecule, there is no indication in D1 that would lead the skilled person to choose the particular range of numbers of glutamic acid residues that is given in claim 1. That is, the choice of this range does not appear to be obvious to the person skilled in the art, because the size of the molecules in D1 is much larger.

Therefore, provided that the clarity issues discussed in section 3 above are dealt with, it seems that the subject-matter of **claim 1 could be considered to meet the requirement of inventive step (Art. 52(1) and 56 EPC).**

5.2. The same arguments with respect to inventive step apply to claim 8.

Therefore, provided that the clarity issues discussed in section 3 above are dealt with, it seems that the subject-matter of **claim 8 could be considered to meet the requirement of inventive step (Art. 52(1) and 56 EPC).**

5.3. The remaining dependent claims relate to further more precise embodiments of the compounds of claim 1. These embodiments mostly relate to compounds which are less closely related to the compounds of D1.

The problem to be solved in all cases is considered to be how to provide alternatives to the compounds of D1.

Many possible modifications to the compounds of D1 would be available to the person skilled in the art, and there does not seem to be any indication in D1 that would lead the skilled person to make those particular modifications that would lead to the compounds disclosed in the present application.

Therefore, if the clarity issues discussed in section 3 above can be dealt with satisfactorily, **it appears that the subject-matter of the dependent claims may also be considered to meet the requirement of inventive step (Art. 52(1) and 56 EPC).**

6. The applicant is invited to file new claims which take account of the above comments.

6.1. When filing a patentable set of amended claims the applicant should at the same time bring the description into conformity with the amended claims. Care should be taken during revision, especially of the introductory portion and any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed (Article 123(2) EPC).

6.2. In order to facilitate the examination of the conformity of the amended application with the requirements of Article 123(2) EPC, the applicant should clearly identify the amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which these amendments are based (see Guidelines E-II, 1).

If the applicant regards it as appropriate these indications could also be submitted in handwritten form on a copy of the relevant parts of the application as filed.